

Serial No. 09/955,153
Amdt. dated April 15, 2004
Reply to Office Action of March 24, 2004

Docket No. HI-0044

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A dishwasher, comprising:

a case;

a rack installed in the case for accommodating the dishes;

a spray arm installed below the rack for spraying washing water;

a combined circulation/drain pump including an upper pump for repeatedly pressurizing and supplying the washing water to the spray arm and a lower pump for discharging the washing water; and

a filtering means for filtering the washing water, the filtering means comprising:

a water collector formed below a bottom surface of the case and in a washing water flow passage connected to the combined circulation/drain pump;

a filter provided in the water collector for filtering out garbage;

a filter self-cleansing means for performing a self-cleansing operation of the filter;

a garbage collecting chamber provided below the bottom surface of the case and connected to both a washing water discharge port of the upper pump and a drain flow passage of the lower pump;

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a fine filter mounted on a top surface of the garbage collecting chamber for filtering out the garbage from the washing water discharged upward; and
a fine filter self-cleansing means for performing a self-cleansing operation of the fine filter.

2. (Original) The dishwasher as claimed in claim 1, wherein the fine filter self-cleansing means includes an auxiliary nozzle attached on a bottom surface of the spray arm for separating the garbage adhered to the fine filter therefrom by spraying the washing water downward.

3. (Previously Presented) The dishwasher as claimed in claim 1, wherein the garbage collecting chamber further includes a dispersing means for preventing the garbage from building up just at one side of the fine filter by dispersing a flow of the washing water introduced into the chamber by means of a pressurizing operation of the upper pump.

4. (Previously Presented) The dishwasher as claimed in claim 1, wherein the garbage collecting chamber further includes a plurality of baffles for preventing the garbage from building up just at one side of the fine filter by dispersing the washing water introduced into the chamber by means of a pressurizing operation of the upper pump.

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5. (Original) The dishwasher as claimed in claim 1, wherein the combined circulation/drain pump further includes a driving motor and a pump casing connected to the driving motor, and wherein an inner space of the pump casing is divided into a circulating section connected to the washing water flow passage and a drain section connected to the drain flow passage so that the upper and lower pumps are installed in the circulating and drain sections, respectively.

6. (Previously Presented) The dishwasher as claimed in claim 1, wherein the filter self-cleansing means comprises:

a foreign material washing nozzle disposed outside the filter for spraying the washing water;

an auxiliary discharge pipe having both ends connected to the foreign material washing nozzle and the upper pump, respectively, so that the washing water can be supplied to the foreign material washing nozzle; and

a blocking barrier placed in the inside of the upper pump and supported by a specific vertex which the blocking barrier pivots in the direction the upper pump rotates in order to discharge the washing water pressurized by the upper pump to the auxiliary discharge pipe during a drain operation.

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7. (Original) The dishwasher as claimed in claim 6, wherein the blocking barrier has a shape of a triangular block so that it can quickly respond to a movement of a stream of water.

8. (Original) The dishwasher as claimed in claim 1, wherein the lower pump is a friction pump.

9. (Currently Amended) A dishwasher, comprising:
a case;
at least one rack installed in the case and configured to receive a plurality of items;
a spray arm installed below the at least one rack and configured to spray washing fluid;
a comprising a first section configured to repeatedly pressurize and supply washing fluid to the spray arm, and a second section configured to discharge the washing fluid; and
a filtering device configured to filter the washing fluid, comprising:
a collector formed in a washing fluid flow passage and configured to collect the washing fluid at a bottom surface of the case and to discharge the collected washing fluid to the pump;
a filter provided in the collector and configured to filter out particles; and

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a filter self-cleansing device configured to perform a self-cleansing operation on the filter, wherein the filter self cleansing device comprises:

a spraying portion disposed outside the filter and configured to spray washing fluid supplied by the first section of the pump onto the filter so as to dislodge particles accumulated on the filter;

a connecting portion configured to connect the spraying portion and the first section of the pump, so as to supply washing fluid to the spraying portion; and
an opening/closing portion attached to the first section of the pump and configured to close during a washing operation and to open during a drain operation so as to discharge the washing fluid to the connecting portion during the drain operation.

10. (Cancelled)

11. (Previously Presented) The dishwasher as claimed in claim 9, wherein the filter comprises a primary filter positioned above the collector, and a secondary filter positioned below the primary filter and configured to filter out particles that were not filtered out by the primary filter.

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12. (Previously Presented) The dishwasher as claimed in claim 9, further comprising a washing fluid inlet port configured to provide washing fluid from the collector to the first section of the pump during a washing operation, and a drain inlet port configured to provide washing fluid in from the collector to the second portion of the pump during a drain operation.

13. (Previously Presented) A dishwasher, comprising:
a case;
at least one rack installed in the case and configured to receive a plurality of items;
a spray arm provided below the rack and configured to spray washing fluid;
a comprising a first section configured to pressurize and supply the washing fluid to the spray arm, and a second section configured to discharge the washing fluid; and
a filtering device configured to filter the washing fluid, comprising:
a collector formed in a washing fluid flow passage and configured to collect the washing fluid at a bottom surface within the case and to discharge the collected washing fluid to the pump;
a collecting chamber provided below the bottom surface of the case and connected to both a washing fluid discharge port of the first section of the pump and a drain flow passage of the second section of the pump, comprising a fine filter mounted on a top surface of the collecting chamber and configured to filter out particles from the washing fluid

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and a dispersing device configured to prevent particles from accumulating at one side of the fine filter by dispersing a flow of the washing fluid into the collecting chamber from the first section of the pump; and

a fine filter self-cleansing device configured to perform a self-cleansing operation on the fine filter.

14. (Previously Presented) The dishwasher as claimed in claim 13, wherein the fine filter self-cleansing device comprises an auxiliary nozzle formed on a bottom surface of the spray arm and configured to remove particles from the fine filter by spraying the washing fluid downward.

15. (Cancelled)

16. (Previously Presented) The dishwasher as claimed in claim 13, wherein the collecting chamber further comprises a plurality of baffles configured to prevent particles from accumulating at one side of the fine filter by dispersing a flow of washing fluid introduced into the collecting chamber through a pressurizing operation of the first section of the pump.

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17. (Previously Presented) The dishwasher as claimed in claim 13, wherein the pump further comprises a driving motor and a pump casing connected to the driving motor, and wherein an inner space of the pump casing is divided into a circulating section connected to the washing fluid flow passage, and a drain section connected to the drain flow passage.

18. (Previously Presented) The dishwasher as claimed in claim 13, wherein the collector further comprises a predetermined filter structure configured to filter out particles.

19. (Previously Presented) The dishwasher as claimed in claim 13, wherein the filtering device further comprises:

a filter configured to filter out particles contained in the washing fluid; and
a self-cleansing device configured to spray the washing fluid toward the filtering device so that particles filtered out by the filter can be smoothly discharged.

20. (Previously Presented) The dishwasher as claimed in claim 9, wherein the pump comprises a combined circulation/drain pump, and wherein the first section comprises a circulation section, and the second section comprises a drain section.

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21. (Previously Presented) The dishwasher as claimed in claim 17, wherein the upper pump is installed in the circulation section of the pump, and the lower pump is installed in the drain section of the pump.

22. (Previously Presented) A washer, comprising:
a case;
a rack installed in the case and configured to receive a plurality of items;
a spray arm installed below the rack and configured to spray washing fluid;
a pump, including a first section configured to repeatedly pressurize and supply washing fluid to the spray arm, and a second section configured to discharge the washing fluid;
and

a filtering device configured to filter the washing fluid, comprising:
a fluid collector formed below a bottom surface of the case and in a flow passage connected to the pump;
a filter provided in the fluid collector and configured to filter out particles;
a filter self-cleansing device configured to perform a self-cleansing operation of the filter;

a collecting chamber provided below the bottom surface of the case and connected to both a washing fluid discharge port of the first section of the pump and a drain flow passage of the second section of the pump;

a fine filter provided at an upper surface of the collecting chamber and configured to filter out particles from the fluid as it is discharged upward; and

a fine filter self-cleansing device configured to perform a self-cleansing operation of the fine filter.

23. (Previously Presented) The washer as claimed in claim 22, wherein the fine filter self-cleansing device includes an auxiliary nozzle provided on a bottom surface of the spray arm and configured to dislodge particles accumulated on the fine filter by spraying washing fluid downward.

24. (Previously Presented) The washer as claimed in claim 22, wherein the collecting chamber further comprises a dispersing device configured to prevent particles from accumulating at one side of the fine filter by dispersing washing fluid throughout the collecting chamber.

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25. (Previously Presented) The washer as claimed in claim 24, wherein the flow of washing fluid is dispersed due to a pressurizing operation of the first section of the pump.

26. (Previously Presented) The washer as claimed in claim 22, wherein the collecting chamber further comprises a plurality of baffles configured to prevent particles from accumulating at one side of the fine filter by dispersing washing fluid throughout the collecting chamber.

27. (Previously Presented) The washer as claimed in claim 22, wherein the pump further comprises a pump casing connected to a driving motor, wherein an inner space of the pump casing is divided into a circulating section connected to a washing fluid flow passage, and a drain section connected to the drain flow passage.

28. (Previously Presented) The washer as claimed in claim 22, wherein the filter self-cleansing device comprises:

a foreign material washing nozzle disposed outside the filter and configured to spray washing fluid;

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an auxiliary discharge pipe connected to the foreign material washing nozzle and the first section of the pump so as to supply washing fluid to the foreign material washing nozzle; and

a barrier pivotably disposed within the first section of the pump, wherein the barrier is configured to pivot in the rotational direction of the first section of the pump so as to discharge washing fluid to the auxiliary discharge pipe during a drain operation.

29. (Previously Presented) The washer as claimed in claim 28, wherein the barrier comprises a substantially triangular block configured to move in response to a movement of a stream of fluid.

30. (Previously Presented) The washer as claimed in claim 22, wherein the second section of the pump comprises a friction pump.

31. (Previously Presented) The washer as claimed in claim 22, wherein the pump comprises a combined circulation/drain pump, and wherein the first section comprises a circulation section, and the second section comprises a drain section.

32. (Previously Presented) The washer as claimed in claim 22, wherein the plurality of items comprises a plurality of dishes.

33. (Previously Presented) A fluid circulation, drain and filtering system, comprising:

- a combined circulation/drain pump, comprising an upper pump configured to repeatedly pressurize and supply fluid to a plurality of fluid spraying devices, and a lower pump configured to discharge the fluid; and
- a filtering device configured to filter the fluid, comprising:
 - a fluid collector provided in a flow passage formed at a lower portion of the system and configured to connect to the combined circulation/drain pump;
 - a filter provided in the fluid collector and configured to filter out particles;
 - a filter self-cleansing device configured to perform a self-cleansing operation of the filter;
 - a collecting chamber connected to both a fluid discharge port of the upper pump and a drain discharge flow passage of the lower pump;
 - a fine filter provided at an upper surface of the collecting chamber and configured to filter out particles from the fluid as it is discharged upward; and
 - a fine filter self-cleansing device configured to perform a self-cleansing operation of the fine filter.

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34. (Currently Amended) A washer comprising the fluid circulation, drain and filter filter system of claim 33.